



Structurally Optimized Hermetic Seals

What It Is:

When a mission takes soldiers into a contaminated environment, they can access a complex of tents and passageways that are collectively protected from toxic agents. To help keep this whole complex contaminant-free, we use specialized shelter liners — known as M28 liners — made of a composite material that resists chemical and biological agents. We're looking for a new closure material to join the modular M28 liners with an airtight seal.

Why It's Needed:

M28 liner sections are currently joined using a triple-track and slider—that is, a three-track linear closure with a mechanical “zipper” that seals the strips together. This closure cannot be heat-sealed directly to the M28 material. The result: a closure that has a stiff and bulky interface, is not flexible in the cold, stretches at high temperatures and collects dirt.

How It Works:

We'll use the new closure in systems like the toxic-free shelter known as JTCOPS, the Joint Transportable Collective Protection System. Our method of sealing will be resistant to:

- Chemical agents;
- Extremes of temperature;
- Liquid and vapor.

This program will continue through FY2001. No particular closure technology has yet been chosen; we're now collecting off-the-shelf samples and working on test methods. We will draw on the capabilities and expertise of the chemical/biological-clothing group at the Natick Soldier Center; they are developing a similar closure system for interfaces between a suit and the gloves, hood and boots.

Benefits:

Improved Performance... Our optimized seals will be easier to apply, more durable and flexible, and less bulky at the liner interfaces.

Multiple Functions... The closure could also be applied to tent entryways, air locks and duct connectors used for environmental control.

Point of Contact:

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***CP DEPMEDS
Current Closure***



***CP DEPMEDS
Entry Airlock***